



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,998	10/29/2003	Toshio Yamada	117636	5318
25944	7590	06/29/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			MAYES, MELVIN C	
			ART UNIT	PAPER NUMBER
			1734	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/694,998	YAMADA ET AL.
	Examiner	Art Unit
	Melvin Curtis Mayes	1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 05 April 2005.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,2,4,7-11 and 13-18 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,2,4,7,9,10 and 13-18 is/are rejected.  
 7) Claim(s) 8 and 11 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

(1)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(2)

Claims 1, 2, 4, 7, 9, 10 and 13-18 are rejected under 35 U.S.C. 103(a) as obvious over JP 2002-309922 in view of Nakamoto et al. and Ogawa et al. 4,559,193.

JP 2002-309922 discloses a method of making a diesel particulate filter comprising: inserting, into cells at the upstream end of the honeycomb, plug parts 25 having conical protrusions 25a protruding from the end face of the cells; and fixing the plugs to the upstream ends. The protrusions 25a support an oxidation catalyst. JP '922 discloses that the honeycomb diesel filter comprises cordierite (Abstract and computer translation). JP '922 does not disclose bonding ceramic plugs to the cells by disposing a bond material between the plugs and cell walls and firing the bond material.

Nakamoto et al. teach that the plugs of a honeycomb diesel filter are comprised of the same ceramic material as that used to make the honeycomb structure. Nakano et al. further teach that the plugs are baked, either after the honeycomb is baked or baked with the honeycomb (col. 2, lines 33 col. 3, line 20).

Ogawa et al. teach that an improved method of sealing open ends of channels of a ceramic honeycomb body used for purifying harmful gases such as automobile exhaust gas is to first apply a suitable sealing material slurry-form into the open ends and then firing the

honeycomb body such that the sealing material is twice applied, firstly in the form of a slurry then in the form of a green body. The sealing slurry can be of the same ingredients as the green body (col. 2, line 64 – col. 3, line 25).

It would have been obvious to one of ordinary skill in the art to have modified the method of JP '922 for making a ceramic diesel particulate filter by providing the plug parts as fired molded plugs or unfired molded plugs and fixing the plugs to the cells by baking, as Nakamoto et al. teach that plugs of a ceramic honeycomb diesel filter are also comprised of ceramic material as can be baked with the honeycomb. Providing the plugs of the same ceramic material as the honeycomb, such as cordierite, as claimed in Claims 14 and 17, would have been obvious to one of ordinary skill in the art, as Nakamoto et al. teach that the plugs are comprised of the same ceramic material as that used to make the honeycomb diesel filter, and JP '922 teaches that honeycomb diesel filter comprises cordierite.

It would have been obvious to one of ordinary skill in the art to have even further modified the method of JP '922 by fixing (bonding) the plug parts to the honeycomb by baking (firing) by first applying a sealing material into the cells before the plug parts then firing the honeycomb and plug parts, as taught by Ogawa et al., as an improved method of sealing the open ends of channels of ceramic honeycomb body used for purifying harmful gases such as automobile exhaust gas. Providing the sealing slurry of the same ceramic material as the plug parts and the honeycomb would have been obvious to one of ordinary skill in the art, as taught by Ogawa et al. By applying a ceramic sealing material to the cell ends before inserting the plug parts then firing, bonding is achieved by disposing a bond material between the plugging

member and the partition walls surrounding the plugging member and firing the bond material, as claimed.

*Allowable Subject Matter*

(3)

Claims 8 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Response to Arguments*

(4)

Applicant's arguments filed April 5, 2005 have been fully considered but they are not persuasive.

Applicant argues that JP '922 does not teach or suggest that the plugs are fixed or bonded to the walls of the honeycomb and that JP '922, Nakamoto and Ogawa do not teach or suggest bonding the plugging member to the walls as recited in Claim 1.

(5)

While JP '922 does not specifically disclose how the plugs are fixed to the cell ends of the honeycomb of a honeycomb diesel filter, Nakamoto et al. clearly teach that the plugs of a honeycomb diesel filter can be comprised of the same ceramic material as that used to make the honeycomb structure and baked either with or after the honeycomb is baked (fired) for bonding with the honeycomb. Nakamoto et al. suggest bonding by firing.

Ogawa et al. is pertinent because it clearly teaches that it is known in the art of sealing honeycomb channels of a filter by firing that an improvement in sealing the channels is to first apply a ceramic sealing material to the channels before the green body (plugs) then fire the sealing material and plugs. Ogawa et al. suggest using a ceramic sealing material to bond plugs to honeycomb cell walls. As set forth by the present specification, the bonding method can be by injecting the bond material between the inserted plugging member and partition wall or by coating the wall with the bond material then inserting the plugging member.

*Conclusion*

(6)

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

(7)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melvin Curtis Mayes  
Primary Examiner  
Art Unit 1734

MCM  
June 27, 2005